

**T&T Systems**

# Light Data Collector

The LOW COST solution to collect, organize and display data from industrial machines.

Checking and organizing data from industrial machines is certainly a priority for every firm.

The solution provided by T&T System is the “Light Data Collector”, a low cost master device which manages data flow between slave devices and remote computers, also providing their organization and display through a web browser.

The data collector is connected to a remote station by LAN (standard or wireless) and communicates with its slave devices using standard or customized fieldbus and protocols.

Slave devices can be connected through a wireless network as well.

Data Collector is cheap and userfriendly; besides a big set of possible personalizations is available to suit different requirements. It is the perfect choice for a small firm requiring both data monitoring and taking care of the costs.

**T&T Systems**

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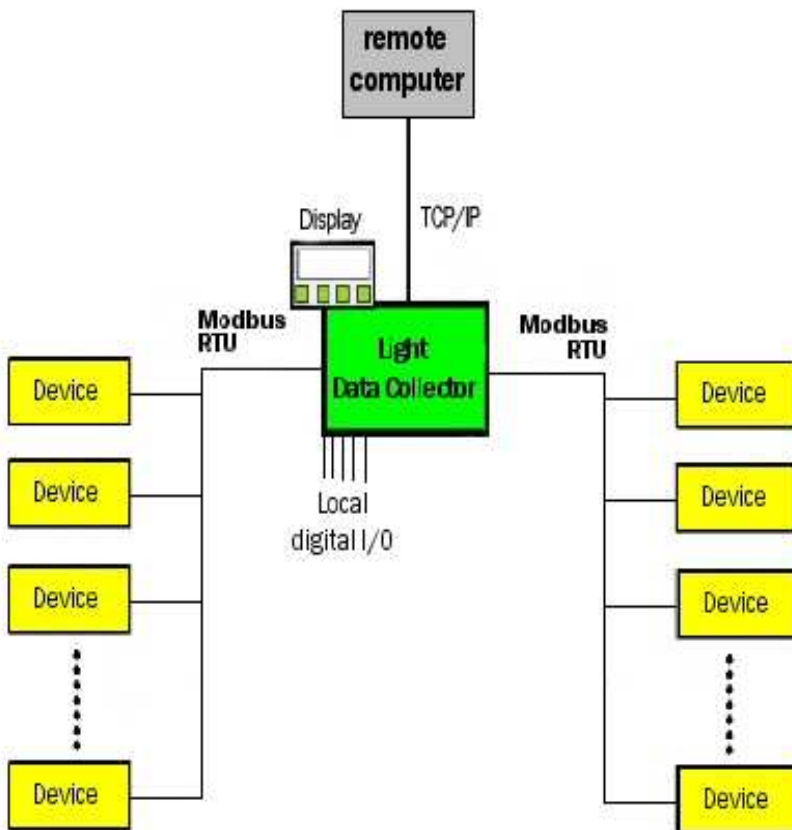
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# What is the Light Data Collector?

It's an electronic master device. It is compact, completely independent, based on a Zilog eZ80F91 microcontroller.

Its aim is collecting information from devices on bus fields, organizing it in groups and displaying it on every computer connected with the local network or Internet.



Collected data can be displayed using a common Internet browser. In this way which it becomes completely independent from both the O.S. and the architecture of the remote computer.

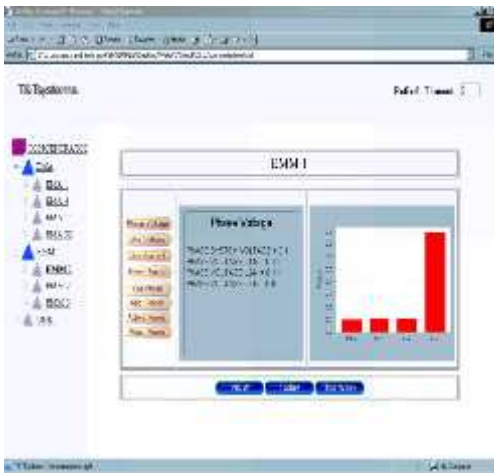
Moreover the configuration of the Data Collector and its devices are easily made through the browser.

The data collector is provided with a display showing the current information passing through.

# Main functions of the Light Data Collector

## 1) management of collected data.

They are displayed through a web server and organized in practical web pages which can be seen on any remote computer mounting a web browser. Independence from both operative system and architecture is a high spot of the device.



2) **Dynamic web pages.** CGI forms allow to pass data and parametric information from the remote machine to the collector and its devices. The use of forms is fast and easy.

3) **Statistical Data processing.** Data are stored in a historical data base and processed by statistical algorithms.

4) **Real Time monitoring of critical data** coming from the slave devices. In case one of them is of range, an alarm message is sent to all the configured Email addresses

## A practical example

The “Light Data Collector” could be used for monitoring an electric network using a set of digital multimeters and electric data recorders. Used in this way the data collector is helpful to manage the power consumptions of the productive line, optimizing costs and life time of the machines.



# Technical details

## HARDWARE

### CPU and Memory:

CPU:  
Microcontroller ZILOG eZ80F91  
Memory:  
256KB Flash, 16KB SRAM  
integrated in the microcontroller.  
2 Flash, 1MB each  
2 optional SRAM, from 512 KB a 4MB each

### Ethernet:

10BaseT 802.3 Ethernet Full e Half Duplex  
Speed:  
10/100 Mbit/s  
Ethernet plug:  
RJ-45

### Busfield:

Protocol:  
Modbus RTU (specification  
Modicon PI MBUS 300  
Rev. J)  
Transmission speed:  
from 9,6 Kbit/s to  
115,2 Kbit/s  
Max number of devices/BUS:  
32

### Display:

LCD, 2x16 connected to the  
I2C of microcontroller.  
3 keybuttons are available  
for the management the  
display menus.

### Power Supply:

Module powered with 24VDC/AC. Input  
range is 24V DC +20% -10% or 24V AC  
10%

### Digital I/O

8 optoisolated digital inputs with  
single common. 3 outputs availa-  
ble (with single exchange con-  
tacts).

### HW Details:

Power Consumption:  
150mA/24Vac  
Work Temperature:  
-10 / +55 °C  
Relative Humidity:  
95% a 40 °C non-condensing  
Modbus Insulation:  
500Vrms

## SOFTWARE

### SW onboard the WEB Server / Data Collector, which includes

Web Server  
Standard Web Site, with possibility to be customized by configuration tables.  
Embedded file system  
Proprietary protocol by T&T Systems based on TCP/IP for fast exchange of data RTDP (Real Time Data Protocol)  
Modbus Master for communication on two serial buses with possibility of a customization by configuration tables  
management of the display with visualization of the standard parameters of configuration  
Management of the configuration tables of the web site and serial buses.  
FTP Server  
Management TCP/IP configuration by a console  
Management of time sincronization by standard protocol NTP  
Management of digital I/O.

# *3 good reasons to choose the Light Data Collector*

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**It is very cheap:** Light data collector is much less expensive than a traditional monitoring system, without affecting the basic functions or the quality of the product.

**Wide possibility of customizing.** Our technicians are available to customize the data collector and adapt it to different needs and different existing slave devices based on several protocols (e.g. Modbus, Profibus).

**Wide portability** Communication through browser allows to use the data collector on any platform (PC, Sun, Mac...) and operative system supporting Sun Java Virtual Machine (Windows, Linux, Unix...). That provides an easy access from every remote machine Without installing any additional software. Being this way computers used for connections need very low requirements.

## *Many good reasons to choose T&T Systems*

- Our principal vocation is the development of SW for microprocessor cards (firmware) for real-time applications.
- We work exclusively in the industrial sector and especially with controls, dealing with supervision and automations of industrial process. We also developed a great experience in the energy sector for the production and distribution of electrical power.
- We are up to date with the most recent advanced real-time and embedded technologies in the IT sector.
- Our way of thinking is not based solely on providing our requested skills, but to fully collaborate as much as possible with the customer.
- We operate under the ISO9000 guidelines of quality and we have worked with classified material for both military and civil contractors.

## T&T Systems

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